

REMARKS

The Applicant has carefully considered the Office action dated March 7, 2005 and the references cited therein. By way of this response, claim 4 has been amended to correct a typographical error, claim 6 has been cancelled without prejudice, and new claims 7-11 have been added. In view of the following, it is respectfully submitted that all pending claims are in condition for allowance and favorable reconsideration is respectfully requested.

As an initial matter, Applicant notes that, because claim 6 has been cancelled, the rejection of claim 6 is moot and will not be further discussed herein.

Turning to the remaining art rejections, the Office action rejected claims 1-4 as being unpatentable over Scott, U.S. Patent 6,627,524 in view of Pradeep et al., U.S. Patent 5,866,448 or Zhou et al., U.S. Patent 5,858,847. The Applicant respectfully traverses these rejections as based on errors of law and fact.

Independent claim 1 recites a method comprising, among other things, forming a sacrificial layer; forming a photoresist pattern on the sacrificial layer; etching the sacrificial layer to form polymer layers on sidewalls of the sacrificial layer, the polymer layers being generated from the etching of the sacrificial layer; and forming a floating gate and a tunnel oxide using the sacrificial layer and the polymer layers as an etching mask. No such method is taught or suggested by the art of record.

For example, Scott, the primary reference relied upon by the Office action, forms a photoresist layer 16 as a sacrificial layer, patterns the photoresist/sacrificial layer 16 into blocks 18, 20, and thereafter forms a coating 24 over the photoresist blocks 18, 20 to form masking blocks 40, 42. Since it is not possible to form polymer layers on sidewalls of a photoresist layer 16 by etching the photoresist layer, it is self-evident that Scott does not teach or suggest the method of claim 1.

The Office action appears to recognize the foregoing, but argues that it would be obvious to replace Scott's photoresist/sacrificial layer 16 with a different sacrificial layer (i.e., a sacrificial layer from Pradeep et al. or Zhou et al.) that will form polymer layers on the sidewalls of the sacrificial layer when the sacrificial layer is etched. Applicant respectfully submits that the Office action's argument is based on at least two legal errors as well as on at least one error of fact.

Turning first to the errors of law, the Office action fails to identify a legally cognizable suggestion for combining Scott and Pradeep or Zhou. In this regard, the Office action states: "it would have been obvious for one having ordinary skill in the art at the time of the invention was made to modify the process of Scott so as to form the polymer layers by etching the sacrificial layer because this would reduce the overall number of process steps, thereby decreasing process time." However, as a matter of law and fact, this is not a proper suggestion for combining Scott with Pradeep or Zhou.

The Applicant wishes to remind the Office of the bedrock legal principles for rejecting a claim under 35 U.S.C. § 103. Specifically, in In re Rouffet, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998) the Federal Circuit explained:

To reject claims in an application under section 103, an examiner must show an unrebutted prima facie case of obviousness. In the absence of a proper prima facie case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent.

Id. at 1455 (citations omitted and emphasis added).

In the Rouffet case, the Examiner had rejected the pending claims on a combination of references. The Board sustained the Examiner. However, the Federal Circuit reversed the Board's decision and ruled that the Examiner's rejections were legally impermissible because they failed to demonstrate a suggestion for combining the references in the manner proposed by the Examiner. As explained by the Federal Circuit:

As this court has stated, “virtually all [inventions] are combinations of old elements.” Therefore, an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be “an illogical and inappropriate process by which to determine patentability.” To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness.

Id. at 1457-58 (citations omitted and emphasis added). These principles have not been followed in rejecting independent claim 1. Merely stating an advantage or possible advantage of combining references, as was done to reject claim 1, is not the same as “show[ing] a motivation to combine the references.”

On the contrary, in order to establish a prima facie case of obviousness, there must be actual evidence of a suggestion to modify a prior art reference or to combine two prior art references, and the suggestion to combine or modify the prior art must be clear and particular. In re Dembiczak, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In order to establish a prima facie case of unpatentability, particular factual findings demonstrating the suggestion to combine must be made. See, for example, Ecologchem Inc. v. Southern California Edison, 56 U.S.P.Q.2d 1065, 1072-73 (Fed. Cir. 2000) and In re Dembiczak, 50 U.S.P.Q.2d 1614, 1617-1618 (Fed. Cir. 1999). Indeed, the law is quite clear that an obviousness rejection must be based on facts, not conjecture.

The Supreme Court... foreclosed the use of substitutes for facts in determining obviousness under section 103. The legal conclusion of obviousness *must be supported by facts*. Where the legal conclusion is not supported by facts it cannot stand.

In re Warner, 379 F.2d 1011, 1017 (C.C.P.A. 1967). This longstanding principle has been followed to date. For example, in the unpublished Board decision, Ex parte Megens, App. No. 1999-0277 (B.P.A.I. Oct. 29, 1999), the Board stated:

Rejections based on 35 U.S.C. § 103 must rest on a factual basis. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967). In making such a rejection, an examiner has the initial duty of supplying the requisite factual basis and may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. Id.

The examiner's conclusion that it would have been obvious to incline Phillips' loading dock floor 65 rests on the completely unfounded assumption that it would be desirable to drain liquid from the floor. The Phillips reference, however, is devoid of any indication that liquid might accumulate on the floor or that such accumulation would pose a problem even if it did occur. It is therefore apparent that the examiner has resorted to improper speculation and hindsight reconstruction to overcome the admitted deficiency of Phillips vis-à-vis the subject matter recited in claim 1.

(Megens at Pages 4-5)(emphasis added).

This is precisely the situation presented here. The "suggestion" in support of the rejection of claims 1-4 amounts to nothing more than a speculative statement that, given the alleged presence of the claim elements in the prior art and an advantage that combining these elements would allegedly achieve, a person skilled in the art would have found it obvious to combine the references to create the claimed invention. The problem with this approach is that it effectively eliminates the requirement of identifying a suggestion for combining references from the obviousness analysis. More specifically, the analysis present in the Office action proceeds in the following manner:

- a) What elements are present in the pending claims?
- b) Can these elements be found in prior art references?

- c) If they can be found, and the references themselves provide no suggestion for combining these elements, can one imagine any end or advantage to be achieved by combining the elements in the manner proposed in the Applicant's claims?
- d) If so, combine the elements in the manner proposed by the Applicant and reject the pending claims.

This mode of analysis is, of course, deeply flawed. Specifically, as noted by the Federal Circuit in the Rouffet quote identified above, all of the elements of most claimed inventions can almost always be found in the prior art. Therefore, the answer to step "b" above will almost always be "yes". Since it is a statutory requirement that all inventions have utility, there will also always be an identifiable end or advantage in combining the elements in the prior art in the manner proposed by any claim (e.g., if there was no purpose to an element in a claim it would not be included in the claimed apparatus, after all, who would pursue a claim with superfluous elements or a claim with no utility?). Therefore, if the "suggestion" requirement of 35 U.S.C. § 103 can be met by merely conjuring up any end or advantage which will be achieved by combining the elements of the prior art references, the suggestion requirement can always be met and is utterly meaningless.

This inherent flaw in the analysis employed in rejecting claims 1-4 is elucidated by viewing the alleged "suggestion" the Office action identifies in support of the rejection. As noted above, in rejecting claims 1-4, the Office action states: "it would have been obvious for one having ordinary skill in the art at the time of the invention to modify the process of Scott so as to form the polymer layers by etching the sacrificial layer because this would reduce the overall number of process steps, thereby decreasing process time." The first part of the statement, namely, "It would have been obvious ... to" is merely boilerplate language that does not address the suggestion requirement. The second part of the statement, namely, "modify the process of Scott so as to form the polymer layers by etching the sacrificial layer"

simply states what the proposed modification of the primary reference is to be; in this case modifying Scott to include etching a layer to from polymer layers. This second part of the statement, thus, describes the proposed modification, but offers no explanation of a motivation for making that modification. The final part of the statement, namely, “because this would reduce the overall number of process steps, thereby decreasing process time,” must, then be the alleged “motivation” for modifying Scott. However, no evidence of record suggests any need to modify Scott to reduce processing steps.

Even if one may theoretically modify Scott as suggested in the Office action, “the mere fact that the prior art may be modified in the manner suggested by the Office does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 23 U.S.P.Q.2d 1780, 1783-84 (Fed. Cir. 1992)(emphasis added). Here, the Office action does not identify any evidence in the prior art indicating or in any way suggesting the desirability of the proposed modification. It only identifies an old element that has an inherent property. Indeed, the Office action’s naked, conclusory statement amounts to nothing more than stating “A person of ordinary skill in the art would be motivated to modify Scotts process to replace the photoresist layer 16 with a different type of sacrificial layer to gain a benefit of employing the different type of sacrificial layer.” In other words, the Office is effectively saying that the motivation of modifying the process of Scott based on Pradeep or Zhou is to gain an inherent benefit of making the modification. Of course, such circular reasoning (i.e., add “X” to have “X”) cannot be a legally proper tool for identifying a suggestion for combining references. If it were, no combination of old elements would ever be patentable since one can always nakedly state, a person would be motivated to add or substitute old element/step X from one reference into another reference because adding or substituting element/step X offers an advantage (again, if adding/substituting “X” had no advantage, who would ever claim it?). Simply put, there is *always* an advantage to

combining old elements/steps that can be identified through hindsight *once that combination is known.*

It should be quite clear from the above that merely identifying an advantage for adding an old element to a combination of elements is not a proper suggestion for making that combination. The MPEP further proves this point. In particular, MPEP § 2144 states that “the strongest rationale for combining references is a recognition... in the prior art or... based on established scientific principles or legal precedent, that some advantage would have been produced by their combination.” The MPEP cites In re Sernaker, 702 F.2d 989, 994-95 (Fed. Cir. 1983) to support this proposition.

Looking at the Sernaker case, we see that the Federal Circuit states: “The lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings.” Sernaker, 702 F.2d at 995-96 (emphasis added). Notice that this statement does not state that it is obvious to combine references simply because there is an advantage to doing so. On the contrary, it carefully states that there can be no obviousness ruling unless something in the art suggests an advantage to combining the references. The advantage itself is not the suggestion, but rather the Court makes it clear that something else suggests the advantage.

The MPEP quote noted above is similar. It states that the “strongest rationale for combining references is a recognition... in the prior art or... based on established scientific principles or legal precedent that some advantage or expected beneficial result would have been produced by their combination.” (MPEP, Page 2100-127) (emphasis added). This, of course, does not state that the strongest rationale for combining references is the mere presence of an advantage to doing so. Instead, as in Sernaker, the strongest rationale is a recognition (i.e., a suggestion) in the art that an advantage will result.

Turning back to the rejections at issue, rather than identifying something in the art that suggests an advantage to making the combination, the Office action just looks for an advantage itself and mislabels that advantage as “suggestion.” As explained above, this is a literal elimination¹ of the suggestion requirement. Since there is always an advantage to a claimed element (or why would you claim it?), the Office action’s misplaced view of an advantage as the suggestion inherently renders all combinations of old elements unpatentable precisely because it eliminates the suggestion requirement from the analysis. Clearly, neither the MPEP section noted above nor the Sernaker case upon which that MPEP section rests for authority stands for the proposition that an advantage of an element is a suggestion in and of itself for including that element in a combination.

This point is further elucidated by considering the “advantage” mislabeled as a “suggestion,” in support of the rejection of claim 1, namely, the “reduction of processing steps” advantage. If “reducing processing steps” can be repeated like a mantra as a “suggestion” for combining old steps to reject a method claim, then the Office has effectively declared a *per se* rule that no improved method that employs old elements/steps can ever again be patentable if it can be found to use fewer steps than a known method, irrespective of how unobvious that combination might be. For instance, if it turned out that one could create a medication that immediately cured any form of cancer by replacing two steps in the process of making aspirin with an old step from another pharmaceutical process such as adding water, under the proposed *per se* rule, that method would not be patentable simply because the Office could point out that fewer steps are used to perform the process! Of course, such a result is absurd, given the fact that millions of dollars and hours of research have gone into

¹ It literally removes the “recognition” portion of the MPEP quote above and the “something in the art” portion of the Sernaker quote.

finding such a cure and, were such a method found, it would certainly be of the type of scientific progress that the patent laws is intended to promote and protect..

As can be seen from this example illustrating the logical end result of such a per se result, it cannot possibly be true that the mere fact that a reduction in processing steps is achieved by a new method is a suggestion for modifying a prior method. Otherwise, the end result would be that any combination of old steps would be unpatentable per se, as long as it could be found to require fewer steps than a known method. Such a result is inconsistent with the Federal Circuit's decisions noted above and, indeed, inconsistent with the public policy of the US patent system. Consequently, it cannot be proper to follow such a rule and the Office action's application of the "reduction of process steps" advantage as a "suggestion" for modifying old process steps is clearly legal error.

In view of the foregoing, the Applicant respectfully submit that the § 103 rejection of claim 1 must be withdrawn because it fails to identify a legally proper suggestion for combining the prior art references in the manner proposed by the Office action. In other words, the Office has failed to establish a prima facie case of obviousness under 35 U.S.C. § 103. On this basis alone, the rejections of claim 1 and all claims depending therefrom must be withdrawn.

The rejection of claim 1 is, however, based on still another legal error. In particular, the law is quite clear that, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention, then the teachings of the references are not sufficient to render the claims prima facie obvious." MPEP § 2143.01, citing, In re Ratti, 270 F.2d 810 (C.C.P.A. 1959). In the rejection at issue, the Office action proposes eliminating the use of the photoresist layer 16 and its covering 24 from Scott. However, as can be seen in Scott, each of Scott's independent claims (i.e., claims 1, 5 and 10) require forming a photoresist block, forming a coating over a photoresist block and

selectively removing the coating. Indeed, these steps constitute at least of the steps recited in each of Scott's claims. Therefore, it is beyond dispute that eliminating the photoresist layer and covering of Scott fundamentally changes "the principle of operation of the prior art invention." As such, as a matter of law, the modification proposed in the Office action is "not sufficient to render the claims prima facie obvious" under MPEP § 2143.01, and the long established case it cites (*In re Ratti*, 270 F.2d 810 (C.C.P.A. 1959)).

In view of the foregoing, it is plain that the rejection of claim 1 is based on at least two legal errors. As such, the rejections of claim 1 and all claims depending therefrom based on Scott must be withdrawn. Accordingly, it is respectfully submitted that all pending claims are in condition for allowance and favorable reconsideration is respectfully requested.

Further, even if the rejection of claims 1-4 were not based on legal errors (it is), the rejection is based on at least one factual error. The Office conjectures that the number of processing steps in Scott would be reduced by incorporating the disclosure of Pradeep or Zhou. However, in relevant part, Pradeep and Zhou (1) form a sacrificial layer, (2) form a photoresistive layer on top of the sacrificial layer, and (3) etch the sacrificial layer using the photoresistive layer as a mask to form polymer layers. In contrast, Scott (1) forms a photoresistive/sacrificial layer and (2) coats the photoresistive/sacrificial layer. Thus, to modify Scott based on Pradeep or Zhou requires the additional step of applying a layer prior to application of the photoresistive layer. Since adding an additional layer would necessarily *increase* the number of processing steps, the Office action's assertion that modifying Scott in view of Pradeep or Zhou would "reduce the overall number processing steps" is, thus, factual error.

Therefore, not only is the rejection of claim 1 predicated on two legal errors, it is also founded on at least one factual error. Accordingly, the rejection of claim 1 and all claims depending therefrom must be withdrawn.

New independent claim 8 is allowable. Claim 8 recites a method comprising, among other things, forming a first sacrificial layer; forming a second sacrificial layer on the first sacrificial layer; and etching the first sacrificial layer using the second sacrificial layer as a mask to form polymer layers on sidewalls of the first and the second sacrificial layers, the polymer layers being generated from the etching of the first sacrificial layer. No such method is taught or suggested by the art of record.

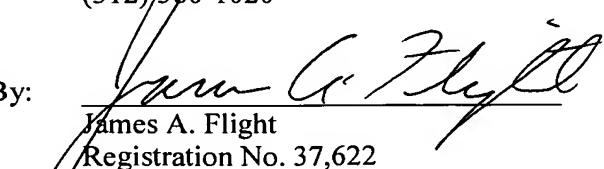
As a final matter, Applicant notes that, because no claim amendments were required to overcome the rejections made in the Office action, any new rejection of any pending claim cannot possibly have been necessitated by an action of the Applicant. Accordingly, any subsequent Office action containing such a rejection **cannot be made final**.

If the Examiner is of the opinion that a telephone conference would expedite the prosecution of this case, the Examiner is invited to contact the undersigned at the number identified below.

Respectfully submitted,

HANLEY, FLIGHT & ZIMMERMAN, LLC.
Suite 4220
20 North Wacker Drive
Chicago, Illinois 60606
(312) 580-1020

By:


James A. Flight
Registration No. 37,622

July 26, 2005